AMENDMENT TO THE CLAIMS

1. (Currently Amended) A speech processing system, comprising:

an acoustic model;

a composite language model that supports a vocabulary of words and including a rules-based model portion that has a plurality of automatically generated grammar rules, generated from an input schema to define a rules-based grammar parse tree that maps words in a natural language speech input into portions of the rules-based grammar parse tree, and a statistical model portion having a plurality of statistical n-gram models trained based on training data, one statistical n-gram model corresponding to each of a plurality of pre-terminals, and wherein words in the vocabulary that are not used to train a specific statistical n-gram model comprise unseen words for the specific statistical n-gram model, the statistical model portion further comprising a backoff model n-gram, separate from the plurality of statistical n-gram models corresponding to the pre-terminals, which, when accessed, is configured to assign a backoff score to a word in the vocabulary, wherein each statistical n-gram model includes a reference to the backoff model portion for all unseen words; and

a decoder coupled to the acoustic model and the composite language model and configured to map portions of ~~a~~ the natural language speech input to the pre-terminals and slots, derived from a schema, based on the acoustic model and the composite language model.

2. (Original) The speech processing system of claim 1 wherein the decoder is configured to map portions of the natural language speech input to the slots based on the rules-based model portion of the composite language model.

3. (Original) The speech processing system of claim 1 wherein the decoder is configured to

map portions of the natural language speech input to the pre-terminals based on the statistical model portion of the composite language model.

4. Canceled.

5. Canceled.

6. Canceled.

7. Canceled.

8. (Previously Amended) The speech processing system of claim 1 wherein the backoff model n-gram assigns a uniform score to every word in the vocabulary.

9. (Original) The speech processing system of claim 1 wherein the rules-based model portion comprises:

a context free grammar (CFG).

10. (Currently Amended) A method of assigning probabilities to word hypotheses during speech processing, comprising:

receiving a word hypothesis;

accessing a composite language model having a plurality of statistical models and a plurality of rules-based models;

assigning an n-gram probability, with an n-gram model, to the word hypothesis if the word hypothesis corresponds to a word seen during training of the n-gram model; and

referring to a separate backoff model for the word hypothesis if the word hypothesis corresponds to a word unseen during training of the n-gram model; and

assigning a uniform backoff probability to each word hypothesis, that corresponds to an unseen word, with the backoff model.

11. (Original) The method of claim 10 and further comprising:

mapping the word hypotheses to slots derived from an input schema based on the rules-based models in the composite language model.

12. (Original) The method of claim 11 and further comprising:

mapping the word hypotheses to pre-terminals derived from the input schema based on probabilities assigned by the n-gram models and the backoff model in the composite language model.

13. (Original) The method of claim 12 wherein referring to a separate backoff model comprises:

referring to a uniform distribution n-gram.

14. (Original) The method of claim 13 wherein assigning a backoff probability comprises:

assigning a uniform distribution score to every word in the vocabulary.

15. (Currently Amended) A composite language model for use in a speech recognition system, comprising:

an automatically learned rules-based model portion having automatically learned grammar rules, automatically generated from a schema to define a grammar that is accessed to ~~recognize words in the input speech signal and to~~ map ~~portions of~~words in an input speech signal to portions of a rules-based grammar parse tree that has slots derived from ~~a~~ the schema; and

a statistical model portion accessed to map portions of the input speech signal to pre-terminals in the rules-based grammar parse tree derived from the schema.

16. (Original) The composite language model of claim 15 wherein the statistical model portion

comprises:

a plurality of statistical n-gram models, one statistical n-gram model corresponding to each pre-terminal.

17. (Previously Amended) The composite language model of claim 15 wherein the rules-based model portion comprises:

an automatically learned context free grammar (CFG), learned from an example base of training data examples.

18. (Original) The composite language model of claim 16 wherein the composite language model supports a vocabulary of words and wherein the statistical n-gram models are trained based on training data, and wherein words in the vocabulary that are not used to train a specific statistical n-gram model comprise unseen words for the specific statistical n-gram model.

19. (Original) The composite language model of claim 18 wherein the statistical model portion of the composite language model further comprises:

a backoff model portion which, when accessed, is configured to assign a backoff score to a word in the vocabulary.

20. (Original) The composite language model of claim 19 wherein each statistical n-gram model includes a reference to the backoff model portion for all unseen words.

21. (Original) The composite language model of claim 20 wherein the backoff model portion comprises:

a uniform distribution n-gram that assigns a uniform score to every word in the vocabulary.